



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,277	01/04/2002	Frank D. Husson JR.	SOLAR1120-3	1245
30542	7590	08/27/2007	EXAMINER	
FOLEY & LARDNER LLP P.O. BOX 80278 SAN DIEGO, CA 92138-0278			PRICE, CARL D	
ART UNIT		PAPER NUMBER		
3749				
MAIL DATE		DELIVERY MODE		
08/27/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

67

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/039,277
Filing Date: January 04, 2002
Appellant(s): HUSSON, FRANK D.

MAILED
AUG 27 2007
GROUP 3700

Stephen E. Reiter
(Reg. No. 31,192)

For Appellant

EXAMINER'S ANSWER

This is in response to the revised appeal brief filed **06/25/2007** appealing from the Office action mailed **07/10/2006**.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

GB 1 517 449	WICKRAMASURIYA	7-1978
US 4,557,251	BURKHARDT	12-1985
US 3,939,968	RYDER	2-1978
US 2,847,067	BREWER	08-1958

SODIS: Technical Note #17, Sodis Bags and Temperature Sensors, 09/2000

"A SUMMARY OF WATER PASTEURIZATION TECHNIQUES" (Dale Andreatta, Ph. D. P.E.); "Recent Advances in Solar Water Pasteurization and "Enhancement of Solar Water Pasteurization with Reflectors"

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims Rejected under 35 U.S.C. 103(a)

Claims 1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over **GB 1 517 449** in view of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors, US004557251 (Burkhardt), US003939968 (Ryder) and US2847067 (Brewer)**.

GB 1 517 449 shows and discloses a solar drinking water heater from heat sealed flexible transparent, reflective and opaque sheets (2, 3, 4), where the lower sheet 4 should be a 2-ply laminate comprised of a heat insulating base layer and an upper membrane of material with a reflective surface, and a bottom rear wall mounted filling cap and spout, acting as an "inlet and outlet" water opening, cap (7, 9) and a top inslative air chamber (see figure 6). The material forming the solar drinking water heater of **GB 1 517 449** being capable of maintaining water temperatures in the range of at least 60⁰ C (see page 2, lines 53-61).

GB 1 517 449 shows and discloses the invention substantially as set forth in applicant's claims with possible exception to:

- a glass reusable transparent pasteurizer temperature history indicator secured, via a bracket, to the removable container sealing cap wherein the temperature history determined by visual inspection of a eutectic mixture located within a transparent container; and
- the use of foam insulation.

US003939968 (Ryder) teaches, form the same sterilization/pasteurizer indicator field of endeavor, that it is known to secure a reusable transparent sterilization/ pasteurizer indicator (37,40), via a bracket (14), to a removable container sealing cap (11). The temperature history being determined by visual inspection of a eutectic mixture located within a transparent container.

SODIS Technical Note #17, Sodis Bags and Temperature Sensors (see also "A SUMMARY OF WATER PASTEURIZATION TECHNIQUES" (Dale Andreatta, Ph. D. P.E.); "Recent Advances in Solar Water Pasteurization and "Enhancement of Solar Water Pasteurization with Reflectors"). **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** discloses the use of reusable water pasteurization indicators (i.e. – WAPI) placed within portable solar water pasteurization devices. The reusable water pasteurization indicators (WAPI) include a transparent container relying on a volume of wax to be melted thereby indicating the device has reached a temperature appropriate to ensure pasteurization. In each of these prior art teachings, the indicator is reused by turning over the wax container to re-orient the wax to the top

of the container. It is noted that reusable water pasteurization indicators **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** operate in a manner not unlike that the indicator in **US003939968 (Ryder)** (i.e. - a transparent container relying on a volume of wax to be melted thereby indicating the device has reached a temperature appropriate to ensure sterilization).

US2847067 (Brewer) teaches, from the same sterilization/pasteurizer indicator field of endeavor, that it is known to use molten pellet as a temperature responsive material held in a repositionable/re-usable glass vial sterilization temperature indicator. **US2847067 (Brewer)** also teaches using the disclosed temperature indicator as a means to measure and to insure an adequate period of time for achieving sterilization.

US004557251 (Burkhardt), teaches, from applicant's same portable flexible solar energy water heating field of endeavor, that it is well known to make use of energy collected from solar radiation to, in portable devices, raise the temperature of water sufficient to bring about pasteurization/ sterilization of the water for "**the purpose of sterilizing water where a supply of pure water is not available.**". **US004557251 (Burkhardt)** furthermore discloses a useful relationship between water depth (about 4 cm), water temperature (boiling point), rate of heating of the water, available solar radiation (an average summer's day) and time (about 8 hours) necessary to achieve the stated purpose. **US004557251 (Burkhardt)** therefore clearly teaches the person having ordinary skill in the art that a suitable time necessary to bring about sterilization/pasteurization of water in a portable solar water processing method or apparatus is dependant on numerous design concerns such as those listed herein above. In addition, **US004557251 (Burkhardt)** clearly teaches the person having ordinary skill in the art techniques necessary for permitting solar radiation to be directed into the water body, and for reducing heat loss from the body of water. **US004557251 (Burkhardt)** includes, for example, a sealed air space between the transparent cover (21) and an upper wall (28) of the water container, applying a layer of foam insulation about the side and rear portions of water body to reduce heat loss, selecting materials having properties suitable for the high temperature operation of the apparatus, forming the water container of a light-transparent material while coating the upper/inner surface of the insulated backing layer with a black light-absorptive coating, etc. The overall arrangement

of elements of the solar water heater/sterilizer of **US004557251 (Burkhardt)** being not unlike that claimed by applicant. The container of **US004557251 (Burkhardt)** is both flexible and expansive in that "In use, under pressure of boiling water within the flask 13, the back wall 29 bulges downwardly into contact with the adjacent surface 50 of the insulation material 19 ...".

In regard to claims **1, 3, 6, 7, 9, 10, 12, 13, 17-22, 26, 37-39, 43 and 47**, for the purpose of generating potable sterilized/pasteurized water in an location where a supply of pure water is not available, it would have been obvious to a person having ordinary skill in the art to modify, by providing suitable foam insulation, and operate the apparatus of **GB 1 517 449** for a period of time sufficient to achieve water temperatures of at least 60 degrees C, in a method of water pasteurization, in view of the teaching of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** and/or **US004557251 (Burkhardt)**. Also, in regard to claims 1 and 43, in particular, for the purpose of providing means to visually inspect and monitor the temperature history of a water heating cycle during operation of the heater to pasteurize water, or a method of pasteurizing water, it would have been obvious to a person having ordinary skill in the art to substitute or modify the cap of **GB 1 517 449** to include a bracket mounted reusable transparent sterilization/ pasteurizer indicator (WAPI), in view of the teaching of **US003939968 (Ryder)**. That is, in view of the level of ordinary skill in the art represented by the prior art teaching in **SODIS Technical Note #17, Sodis Bags and Temperature Sensors**, the examiner maintains that a person have this ordinary skill in applicant's filed of endeavor would have used known reusable water pasteurization indicators (WAPI) in portable solar water heater containers, such as in **GB 1 517 449**, to indicate the water in the heater has reached a temperature appropriate to ensure pasteurization. And, in view of the teaching of **US003939968 (Ryder)**, it would have been obvious to a person having ordinary skill in the art to position and/or secured the reusable water pasteurization indicator to the cap, so as to provide ease of access and operation thereof. Also, in view of the teachings of **US2847067 (Brewer)**, it would have been obvious to a person having ordinary skill in the art to use wax as the in temperature responsive material held in a glass vial, and to use the temperature indicator as a means to measure and to insure an adequate period of time for achieving sterilization/pasteurization of the water in **GB 1 517 449**. And, Official Notice is also taken that glass is well known for its non-reactive characteristic when

used at high temperatures and when used to contain a variety of chemical species (e.g. – glass is notoriously well known in laboratory applications, mercury thermometers, etc.). Therefore, in view of that which is well known, for the purpose of providing a non-reactive chemical resistant material, it would have been obvious to a person having ordinary skill in the art to use glass to contain a temperature indicator.

Claims Rejected under 35 U.S.C. 103(a)

Claims **10, 14, 15 and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over **GB 1 517 449** in view of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors, US004557251 (Burkhardt), US003939968 (Ryder) and US2847067 (Brewer)**, as applied to claims 1 and 43 above, and further in view of **Stouman et al.**

GB 1 517 449 discloses the invention substantially as set forth in the claims with possible exception to the collector/absorber member being pleated and perforated to permit the flow of water from one side to the other side.

Stouman et al teaches, from applicant's same solar energy water heater field of endeavor, the use of a pleated woven polymer energy collecting surface (18) in a portable flexible wall water solar heater. The porous woven polymer material permits the flow of water from a first to a second side of the collecting surface while the pleated shape increases the surface area thereof and thereby increasing the rate of solar heat absorption.

In regard to claims **14, 15 and 44**, for the purpose of permitting the circulation of water through the surface of the **GB 1 517 449** collector and to increase the amount of solar energy collected, it would have been obvious to a person having ordinary skill in the art to modify the collector to be pleated and perforated, in view of the teaching of either **Stouman et al.**

(10) Response to Argument

Appellant argues the invention, as recited in the independent claims, distinguishes over the five references relied upon by the Examiner. More particularly, appellant argues that the primary reference **GB 1517449** does not disclose at least two components of the claimed invention.

First, appellant argues **GB 1517449** fails to teach or suggest temperature indicator or insulating structures.

Second, appellant argues **GB 1517449** patent does not disclose or suggest achieving the minimum desired temperature of 60°C, instead only disclosing achieving temperatures of 58-59°C.

Appellant suggests the Examiner unsuccessfully attempts to overcome the acknowledged deficiencies of the primary reference by further reliance on four secondary references (SODIS, Burkhardt, Ryder and Brewer).

With regard to the prior art publication **SODIS Technical Note #17, Sodis Bags and Temperature Sensors**, herein after referred to as **SODIS**, appellant argues the following:

“With reference to SODIS, the disclosure of SODIS clearly lacks several key features of the invention. For example, the SODIS reference fails to teach or suggest a solar water pasteurizer that includes one or more energy converting structures therein, a first and second insulation structure, or a temperature indicator positioned within a resealable cap which indicates that a temperature of at least 60°C has been attained. Instead, to the extent that the SODIS disclosure is even related to the present invention, it is limited to a bag for retaining water that includes a reusable temperature indicator which indicates whether a temperature of 50°C (inadequate to achieve pasteurization) has been obtained. There is simply no disclosure of any of the other features required by Appellant's water pasteurizer.”

In response to appellant's argument that the examiner has combined five references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

In response to appellant's arguments against the references individually, appellant is reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

For the reasons set forth in the examiner's action and for the reasons set forth herein below the examiner maintains that a person having ordinary skill in the art at the time of the invention would have thought it obvious to provide **GB 1 517 449** with foam insulation, in order to achieve operating temperatures greater than those disclosed. Furthermore, with regard to the operating temperatures disclosed in **GB 1 517 449**, it is first noted that the water temperature of 58°/59° C must be viewed in the context of the specific exemplary conditions described. That is, **GB 1 517 449** describes "a specific example of the use of a solar heater as described above" including an envelope of a given size (6' x 3'), a given liquid volume (2 gallons), the water being at an initial temperature of 21° C, and where the unit is exposed to solar energy for 50 minutes which results in a water temperature of 58°/59° C. Indeed, this example is merely representative of the capabilities of the solar energy collector of **GB 1 517 449**. Nothing in the disclosure of **GB 1 517 449** suggests the solar energy collector of the type disclosed therein is not capable of, even without additional foam insulation, of achieving temperatures in the operating range set forth in appellant's claims. That is, for example, when heating a lesser volume of water or when the unit is exposed to solar radiation for a period of time longer than 50 minutes. It is further noted that the example of **GB 1 517 449** demonstrates the relationship between at least some essential design parameters (unit size, water volume, solar radiation exposure time) associated with portable solar water heaters. In this regard **GB 1 517 449** therefore establishes a level of ordinary skill and understanding for the person having ordinary skill in the art at the time of the invention. That is, a person having ordinary skill in the art at the

time of the invention would reasonably expect that the amount of time a portable bag type solar energy water heater is exposed to energy from the sun is predictive of water temperature, for example. Furthermore, in view of the teaching of at least the teaching of **US004557251 (Burkhardt)**, foam insulated portable solar water heaters are known to achieve water boiling temperatures which are well above those specified in appellant's claims. Therefore, the examiner maintains that a person having ordinary skill in the art would have understood that the time of the invention understand and appreciated the advantages of adding of foam insulation to portable water heating device such as **GB 1 517 449**. Since, in view of the teaching of **US004557251 (Burkhardt)**, it would have been known that a foam insulated a portable water heater would likely produce water temperatures as much as about a 40° C above appellant's claimed range of "at least 60°C". The portable solar heater of **US004557251 (Burkhardt)** achieving temperatures sufficient to produce sterilizing boiling water temperatures (100° C). That is, the person having ordinary skill in the art would have known that the addition of foam insulation to the **GB 1 517 449** solar water heater would result in a predictable increase in temperature during a given period of operation. Indeed, the person having ordinary skill in the art would at least expect a modest increase in the water temperature in a device of the type represented in the **GB 1 517 449** example, because of the relatively high temperatures achieved in the foam insulated device of **US004557251 (Burkhardt)**. Even a modest increase of 3°C would necessarily result in **GB 1 517 449** operating at temperatures in the range of applicant's claimed "at least 60°C". In this regard, it is further noted that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Therefore, the examiner maintains the position that, for the purpose of ensuring at least relatively higher operating temperatures, it would have been obvious to a person having ordinary skill in the art to modify the apparatus of **GB 1 517 449** to include suitable foam insulation to aide in limiting heat loss and to achieve operating temperatures in the claimed range, at least in view of **US004557251 (Burkhardt)**.

It is important to clarify that appellant's claimed range of "at least 60°C" (claim 1) relates only to the characteristics of the claimed insulation structure ("wherein said insulation structures collectively are sufficient to enable said pasteurizer to achieve water temperatures of at least 60°C"). The requirement that the claimed insulation structure have characteristics sufficient to achieving temperatures of "at least 60°C" should not be confused with any temperature or range of temperatures at which the claimed apparatus (claim 1) may, or may not, be operated. This recitation in applicant's claimed invention addresses only the ability for the claimed insulation structure to "achieve" the "at least 60°C". And, contrary to applicant's remarks in the Brief, the operating parameters of the temperature indicator (WAPI) are not related to the "at least 60°C". Therefore, appellant's argument that "the SODIS reference fails to teach or suggest a solar water pasteurizer ... or a temperature indicator ... which indicates that a temperature of at least 60°C has been attained" is not commensurate with the scope of the claimed invention. Claim 1 does not require a temperature indicator "which indicates a temperature of at least 60°C". In fact, appellant's claims lack any recitation of actual numeric values defining the threshold temperature or range of temperature at which the reusable indicator (WAPI) operates. For example, appellant's claim 1 apparatus merely requires the indicator contains "wax therein that melts at pasteurization temperatures" and the method of claim 43 merely requires "re-usable temperature indicators for indicating the temperature history of the water contained therein".

The prior art teaching of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** clearly establishing the level of ordinary skill in the art regarding the predictable use of solar energy collectors to achieve pasteurization of water when operated under suitable conditions, as well as the known application of water pasteurization indicators (WAPI) to indicate when pasteurization temperatures have been achieved. Applicant's attention is directed to the examiner's previous remarks which discuss the level of ordinary skill in the art regarding the predictable use of solar energy collectors to achieve pasteurization of water. In the office letter mailed on 07/10/2006, in response to applicant's arguments against the teaching of **SODIS**

Technical Note #17, Sodis Bags and Temperature Sensors, the examiner presented applicant with the following information which is reproduced herein below:

“Further in support of the examiner’s position appellant’s attention is directed to the exact language of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** which characterizes the 50°C temperature as a “*threshold*” water temperature; **SODIS Technical Note #9** (of record) which states “*Microorganisms are heat sensitive. Table 2 lists up the required temperature to eliminate microorganisms within 1, 6 or 60 minutes* It can be seen that it is not required to boil the water in order to kill 99.9% of the microorganisms. Heating up water to $50\text{-}60^{\circ}\text{C}$ for one hour has the same effect”; and, and “Enhancement of Solar Water Pasteurization with Reflectors” Negar Safapour and Robert H. Metcalf, Department of Biological Sciences, California State University Sacramento, Sacramento, California 95819-6077 Received 13 July 1998/Accepted 3 November 1998 (of record) states with regard to water pasteurization temperature “*in order to verify that sufficient water temperatures (at least 65°C) were obtained, we included a reusable water pasteurization indicator (WAPI) which was developed for SCI (Fig. 2). The WAPI is a clear polycarbonate tube partially filled with a soybean wax which melts at about 70°C . The WAPI tube is placed at the bottom of a black jar of water which is solar heated.*” In view of the level of ordinary skill in the art as a whole represented in these prior art teachings, the examiner maintains that a person have this ordinary skill in appellant’s filed of endeavor would have used known reusable water pasteurization indicators (WAPI) in portable solar water heater containers, such as in **GB 1 517 449**, to indicate the water in the heater has reached a temperature appropriate to ensure pasteurization.”

Therefore, as a matter separate from the capability of the solar collector insulation to achieve at least 60°C , the examiner maintains that a person have this ordinary skill in applicant’s filed of endeavor would known to incorporate reusable water pasteurization indicators (WAPI) in a **GB.1 517 449** type portable solar water heater. That is, in view of the teaching of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** that a water pasteurization temperature indicator having threshold of for example 50°C are known to be used to indicated a temperature which pathogens become inactive, it would have been obvious to a person having ordinary skill in the art to provide **GB 1 517 449** with water pasteurization indicators (WAPI), for the purpose of providing a visual temperature means for monitoring the history of a water heating cycle during operation of the heater as a method of pasteurizing water.

Appellant argues that:

US003939968 (Ryder) is completely unrelated to the field of Appellant's endeavor as it discloses a system for holding contact lenses and, therefore, constitutes non-analogous art.

US003939968 (Ryder) in no way relates to systems which use solar energy. Instead, the device disclosed in Ryder relies on an external heating device: "The contact lens holder 10 is then placed in a heating unit, such as an autoclave or boiler" See Ryder, col. 4, lines 23-24.

While the temperature indicator of **US003939968 (Ryder)** is characterized in the context of a "sterilization" system a person having ordinary skill in the art would have recognized the relationship, and relevance, of such a device to "pasteurization" apparatus. As can be seen from the following definitions, a person having ordinary skill in the art would clearly understand and appreciate the close relationship between pasteurization and sterilization, since pasteurization is known as "partial sterilization of a substance".

Main Entry: pas·teur·iza·tion

Variant: *also British pas·teur·isa·tion* /"pas-ch&-r&-'zA-sh&n, "pas-t&-/

Function: *noun*

1 : partial sterilization of a substance and especially a liquid (as milk) at a temperature and for a period of exposure that destroys objectionable organisms without major chemical alteration of the substance
2 : partial sterilization of perishable food products (as fruit or fish) with radiation (as gamma rays)

Source: *Merriam-Webster Medical Dictionary, © 2002 Merriam-Webster, Inc.*

Entry: Sterilize

Function: Verb

Definition: make clean

Synonyms: alter, antisepticize, aseptify, aseptize, autoclave, castrate, change, clean, decontaminate, desexualize, disinfect, emasculate, fix, fumigate, incapacitate, make sterile, neuter, pasteurize, purify, sanitize, spay

Source: *Roget's New Millennium™ Thesaurus, First Edition (v 1.0.5)*

Copyright © 2004 by Lexico Publishing Group, LLC. All rights reserved.

Appellant is reminded that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The examiner also recognizes that it has been held that a prior art reference must either be in the field of appellant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the appellant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, given the level of ordinary skill in the art as that of a person recognizing the relationship between pasteurization and sterilization, as noted herein above, when attempting to solve the problem of monitoring temperature conditions within a water vessel to make clean, or to destroy objectionable organisms would be motivated look to analogous and indeed highly relevant teachings such as that presented by **US003939968 (Ryder)**. Appellant's argument that **US003939968 (Ryder)** is non-analogous, since it "relies on external heating device" is noted, but not found persuasive. The heat applied externally to the container in **US003939968 (Ryder)** is not unlike, and indeed analogous to, the solar water pasteurizer of appellant's claimed invention heated externally from solar energy radiation. The sterilization indicator of **US003939968 (Ryder)** contains a quantity of eutectic material, such as a wax with a specific melting point. The indicator vessel is partially filled with this eutectic material. The eutectic material is of a character to be substantially solid at all temperatures below the sterilization temperature of the contact lenses and then liquify at the sterilization temperature. The indicator vessel is initially positioned within the lens holder so that the solid eutectic material is at the upper portion of the vessel. The melting of the eutectic material causes it to flow to the bottom

portion of the vessel, which indicates that the sterilization temperature has been reached. When the container is removed from the heating apparatus and opened, after cooling, the user can visually inspect the vessel to see that the eutectic material has melted and fallen to the bottom half of the vessel. The indicating vessel can be used again by rotating the vessel 180 degrees so that the now solid mass of eutectic material is again at the top of the vessel. Secured to the cap 11 is a central support member 14. The support member 14 has a stem portion 16 extending upwardly therefrom to be inserted into a correspondingly shaped slot, not shown, formed in the underside portion of the cap 11. The central support 14 may be removed from the cap if desired.

The wax based sterilization indicator of **US003939968 (Ryder)** is removably secured in the cap of the sterilizing container by a bracket or support member (14), and operates in a manner not unlike the wax based pasteurizer indicators (WAPI) known to be used in the solar energy field of endeavor. Therefore, for the purpose of providing means to visually inspect and monitor the temperature history of a water heating cycle during operation of the heater to pasteurize water, it would have been obvious to a person having ordinary skill in the art to substitute or modify the cap of **GB 1 517 449** to include a bracket mounted reusable transparent sterilization or pasteurizer indicator (WAPI) mounted therein, in view of the teaching of **US003939968 (Ryder)**. That is, in view of the level of ordinary skill in the art represented by the prior art teaching in **SODIS Technical Note #17, Sodis Bags and Temperature Sensors**, the examiner maintains that a person have this ordinary skill in appellant's filed of endeavor would have used known reusable water pasteurization indicators (WAPI), or sterilization indicators like that of **US003939968 (Ryder)**, in portable solar water heater containers, such as in **GB 1 517 449**, to indicate the water in the heater has reached a temperature appropriate to ensure at least pasteurization, and therefore is safe to drink. And, in view of the teaching of **US003939968 (Ryder)**, it would have been obvious to a person having ordinary skill in the art to position and/or secured the known reusable water pasteurization indicator (WAPI) within the container cap. For example, to provide greater access to and operation thereof.

Appellant argues that **US002847067 (Brewer)**, does not disclose any device or apparatus for the heating and/or pasteurization of water. Instead, appellant suggests **US002847067**

(Brewer), discloses only a reusable temperature indicator and fails to teach or suggest using the disclosed temperature indicator in a pasteurization context, or to position the temperature indicator within a cap, as recited in the pending claims. Regarding the prior art reference of **US002847067 (Brewer)**, appellant is again reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Indeed, appellant is further reminded the examiner is not attempting to rely on **US002847067 (Brewer)** does not disclose any device or apparatus for the heating and/or pasteurization of water, or to teach position the temperature indicator within a cap. As stated herein above and in the examiner's rejection of the claimed invention it is believed the prior art reference of at least **SODIS Technical Note #17, Sodis Bags and Temperature Sensors**, provides a suitable teaching that, at the time of the invention, it was well known and obvious to use reusable water pasteurization indicators (WAPI) in portable solar water heaters like that of **GB 1 517 449**, to aide in assuring potable water conditions. And, it is believed the prior art reference of **US003939968 (Ryder)** provides the necessary teaching for mounting a wax based indicator in the cap of a heated container, like that of **GB 1 517 449**. **US002847067 (Brewer)** however is relied on to teach that, at the time of the invention, it would have been obvious to a person having ordinary skill in the art to form wax based sterilization temperature indicators from glass.

Appellant's brief presents no arguments directed to the examiner's rejection of claims 10, 14, 15 and 44 under 35 U.S.C. § 103(a) as being unpatentable over **GB 1 517 449** in view of **SODIS Technical Note #17, Sodis Bags and Temperature Sensors, US004557251 (Burkhardt)**, **US003939968 (Ryder)** and **US2847067 (Brewer)**, as applied to claims 1 and 43, and further in view of **Stouman et al.**

The Declaration previously filed on 03/16/2005 by appellant Frank D. Husson, Jr. under 37 CFR 1.132 (Appendix VII of the Brief), attempting to establish nonobviousness by secondary considerations has been considered. In this declaration the inventor Frank D. Husson, Jr. states at least the following with regard to the exhibits submitted:

“The following exhibits are submitted to demonstrate the world wide need for and distinct advantages of a low cost and effective water pasteurization process, as provided in claim 1 of the present application. The documents submitted have been collected by the named inventor and demonstrate both a long felt need and expected commercial success of the claimed solar water heater and pasteurizer.”

Regarding the previously filed declaration under 37.CFR 1.132., appellant's appeal Brief further suggests the following:

“The previously submitted declaration of the inventor, Frank D. Husson, Jr., under 37 C.F.R. § 1.132 and accompanying exhibits (resubmitted herewith) clearly illustrate the need for effective, easy-to-use, low-cost water pasteurization devices in rural areas and underdeveloped nations where suitable drinking water may not be readily available. Further, the lack of suitable alternatives currently available in the marketplace illustrate the unmet need for such devices. The exhibits clearly indicate that embodiments of the present application provide simple, low maintenance systems with which users, including uneducated Third World residents, are able to produce safe drinking water. The emails submitted as evidence clearly establish a substantial worldwide need for a system such as that provided by embodiments of the present invention, as well as the interest in implementing production and distribution and expected commercial success of the low cost water heater and pasteurization system provided in the present invention.

Therefore, in light of the lack of a *prima facie* case of obviousness and the overwhelming amount of evidence of secondary considerations exhibiting nonobviousness, the Examiner's rejection of the claims cannot stand. For all of the above reasons, Appellant submits that the Examiner's rejection of the claims is wholly improper and must be reversed.”

With regard to the issue of commercial success, no evidence can be found in the either the declaration or exhibits attached thereto supporting the notion that the invention has actually achieved and/or actually demonstrated any level of real commercial success necessarily indicative of nonobviousness. It is further noted that the Declarant Frank D. Husson, Jr. relates the invention and exhibits only in the context of “expected”, “potential” and “achievable” commercial success, rather than demonstrating actual commercial success supported by any evidence present in the declaration and exhibits.

The applicant has attempted to show long-felt need by submitting an article from the National Renewable Energy Lab, a clip from Business Week and articles and e-mails related to his product. The issues applicant needed to address are whether the evidence shows that the invention satisfies a need that was recognized by those of ordinary skill in the art as a persistent

need, whether the need had been satisfied by another, and whether the invention satisfied the long-felt need (MPEP 716.04).

However, neither one of the National Renewable Energy Lab write-up or the a clip from Business Week present sufficient evidence that, for example, the failure to solve any long-felt need was not due to factors such as lack of interest or lack of appreciation of an invention's potential or marketability rather than want of technical know-how. *Scully Signal Co. v. Electronics Corp. of America*, 570 F.2d 355, 196 USPQ 657 (1st. Cir. 1977). It is noted that the National Renewable Energy Lab write-up (Weekly Highlights "Solar Water Pasteurization System") characterizes water treatment in the developing world as a massive and complex problem, and references a previous "staff" investigation (Burch and Thomas, NREL/TP-550-23110; and Solar Energy Journal, Vol. 64, p. 87) which both characterizes solar water pasteurization in the FY98 time frame as a "potential niche market for solar products" and compares a solar water pasteurization system (SSI product), with other known water treatment processes including "batch chlorine" and a "home UV-PV- filter system". National Renewable Energy Lab write-up acknowledges however that "It should be remembered that other considerations are crucial for 3rd world application; a major advantage of solar pasteurization is it's simplicity: no chemicals to run out, no lights to burn out, and no electronics to fail." Therefore, it is apparent that any analysis presented in the National Renewable Energy Lab write-up is comparing the SSI product to other non-solar water treatment systems, and therefore provides no comparison of the SSI product with other portable solar energy water pasteurization products (e.g. - **SODIS Technical Note #17, Sodis Bags and Temperature Sensors** or **US004557251 (Burkhardt)**). With regard to the SSI product the National Renewable Energy Lab write-up states only that "NREL will place the product's glazing and absorber materials under accelerated testing, increasing the program's database of glazing and absorber materials for later products designed for U.S. use." Therefore, while the National Renewable Energy Lab write-up includes a description of the SSI product, which Declarant Frank D. Husson, Jr. relates to claim 1 of the present application, there is no evidence in this exhibit, or in the related clip from Business Week, that applicant's invention has necessarily solved any long felt need. The exhibit e-mails from people expressing interest in testing the invention do not necessarily correlate to long-felt need, since is not clear whether any incentives were offered or expected

from these people. Indeed, in one case, there is a reference to the cost of the materials being subsidized (See the email: From: Jaime Frias, Sent: Monday, October 18, 2004 3:17 AM; To: fhusson@solarsolutions.info, Cc: Michael Roberts, Subject: Re: Info request - Attn – Janine which states: “For your information, IDE works in promoting sustainable solutions for the poor. Having said this is that if we engage in testing this technology is under the assumption that they will be commercialized. I wanted to just make the point as many NGOs follow a ‘subsidy’ approach for disseminating products”). And, none of the emails present evidence that applicant’s invention necessarily solves a long felt need and/or achieved a level of actual commercial success indicative of nonobviousness.

The other exhibit articles relate to applicant’s product and could be based on applicant’s marketing materials rather than on actual testing or evidence collected by the writers.

Declarant comments on the lack of suitable alternatives currently available in the marketplace, however there is no evidence that there were no suitable alternatives at the time the invention was made. On the contrary, documentary evidence of record in the present application appears to suggest alternatives were indeed available at the time of the invention. For example, at least **SODIS Technical Note #17, Sodis Bags and Temperature Sensors or US004557251 (Burkhardt)** specifically address the issue of providing potable water through a method of heating the water in a portable solar energy absorbing device.

The examiner acknowledges that secondary considerations such as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented, as indicia of nonobviousness. However, appellant’s declaration and accompanying exhibits fail to provide information sufficient to establish indicia of nonobviousness of the claimed invention over the prior art relied on by the examiner to reject the claims.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Conferees:


Carl D Price
Primary Examiner
Art Unit 3749


Steven McAllister
SPE
Art Unit 3749


Robin Evans
TQAS
3700